PATENT COOPERATION TREATY

From the:
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

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PCT

NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

JGC

Date of mailing *day/month/year*	7 MAR 2005
Applicant's or agent's file reference 12550540/JGC/DAR	**IMPORTANT NOTIFICATION**

International Application No.	International Filing Date	Priority Date
PCT/AU2003/001110	28 August 2003	4 December 2002

Applicant

PREDICT INTERNATIONAL PTY LTD et al

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.

2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.

3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translations to those Offices.

4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide

Name and mailing address of the IPEA/AU	Authorized officer
AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. (02) 6285 3929	MADHU K. JOGIA Telephone No. (02) 6283 2512

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 12550540/JGC/DAR	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International Application No. **PCT/AU2003/001110**	International Filing Date *(day/month/year)* 28 August 2003	Priority Date *(day/month/year)* 4 December 2002
International Patent Classification (IPC) or national classification and IPC **Int. Cl.** [7] A23L 2/04; 2/06; A23N 1/00; 1/02; C12G 1/00; 1/02		
Applicant PREDICT INTERNATIONAL PTY LTD et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 3 sheets, including this cover sheet.

   [X] This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 4 sheet(s).

3. This report contains indications relating to the following items:

   - I [X] Basis of the report
   - II [ ] Priority
   - III [ ] Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV [ ] Lack of unity of invention
   - V [X] Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI [ ] Certain documents cited
   - VII [ ] Certain defects in the international application
   - VIII [ ] Certain observations on the international application

Date of submission of the demand	Date of completion of the report
30 June 2004	1 March 2005
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer MADHU K. JOGIA Telephone No. (02) 6283 2512

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/AU2003/001110

I. Basis of the report

1. With regard to the **elements** of the international application:*

- [ ] the international application as originally filed.
- [X] the description, pages **1-15** , as originally filed,
  pages , filed with the demand,
  pages , received on with the letter of
- [X] the claims, pages , as originally filed,
  pages , as amended (together with any statement) under Article 19,
  pages , filed with the demand,
  pages **16-19** , received on **17.02.2005** with the letter of **17.02.2005**
- [X] the drawings, pages **1-7** , as originally filed,
  pages , filed with the demand,
  pages , received on with the letter of
- [ ] the sequence listing part of the description:
  pages , as originally filed
  pages , filed with the demand
  pages , received on with the letter of

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language which is:

- [ ] the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- [ ] the language of publication of the international application (under Rule 48.3(b)).
- [ ] the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- [ ] contained in the international application in written form.
- [ ] filed together with the international application in computer readable form.
- [ ] furnished subsequently to this Authority in written form.
- [ ] furnished subsequently to this Authority in computer readable form.
- [ ] The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- [ ] The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. [ ] The amendments have resulted in the cancellation of:
   - [ ] the description, pages
   - [ ] the claims, Nos.
   - [ ] the drawings, sheets/fig.

5. [ ] This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report*

International application No.
PCT/AU2003/001110

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims **1-22**	**YES**
	Claims	**NO**
Inventive step (IS)	Claims **1-22**	**YES**
	Claims	**NO**
Industrial applicability (IA)	Claims **1-22**	**YES**
	Claims	**NO**

2. Citations and explanations (Rule 70.7)

The following documents identified in the International Search Report have been considered for the purposes of this report:

D1 Science (1997)
D2 Am J Enol Vitic (1992)
D3 US 5466294
D4 US 5358571
D5 US 4490335
D6 US 4370473
D7 US 4101285

Novelty (N) and Inventive Step (IS) Claims 1-22

The present invention relates to a process of recovering juice or wine from marc comprising steps of diffusion, fractionation, recycling and collection. The fractionation step includes process of "reverse osmosis".

None of the prior art documents D1-D7 appear to clearly disclose or teach fractionation steps involving "reverse osmosis" in the art.

Therefore the invention as defined in claims 1-22 appears to be novel and inventive.

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CLAIMS:

1. A method of recovering juice or wine from marc comprising the steps of:
   (i) diffusion extracting marc with an extraction liquid to provide a liquid portion containing matter extracted from the marc;
   (ii) fractionating the liquid portion by reverse osmosis to provide a permeate and a residue;
   (iii) recycling at least a portion of the permeate as extraction liquid; and
   (iv) collecting at least a portion of the residue *for use as recovered juice or in recovered wine.*

2. A method according to claim 1, wherein water is recovered from the marc after extraction and the recovered water is recycled as extraction liquid.

3. A method according to claim 2, wherein water is recovered from the marc after extraction by pressing the marc and collecting the liquid pressings or by collecting water evaporated off the marc.

4. A method according to claim 3, wherein the extraction liquid comprises water.

5. A method according to claim 4, wherein the liquid portion is filtered before the filtered liquid portion is fractionated by reverse osmosis.

6. A method according to claim 5, wherein the liquid portion is micro-filtered by using a cross-flow filter before being fractionated by reverse osmosis.

7. A method of recovering wine from marc according to any one of claims 1 to 6, wherein ethanol and optionally resveratrol are separated from the permeate before the remaining portion of the permeate is recycled as extraction liquid.

8. A method according to claim 7, wherein ethanol separated from the permeate is combined with collected residue to provide recovered wine.

9. A method of recovering wine from marc according to claim 8, wherein tartrates are recovered from the residue before the remaining portion of the residue is collected.

10. A method according to claim 1, wherein the marc is extracted by using a counter current diffusion extractor.

11. A method according to claim 6, when used in the recovery of juice from white wine marc.

12. A method according to claim 9, when used in the recovery of wine from red wine marc.

13. A process for recovering wine from red wine marc comprising the steps of:

(i) providing a stream of marc,

(ii) providing a stream of extraction liquid comprising at least water;

(iii) feeding the marc and extraction liquid streams into a continuous counter current diffusion extractor and counter current extracting the marc with the extraction liquid to provide a liquid stream containing matter extracted from the marc and a stream of spent marc;

(iv) recovering water from the stream of spent marc and feeding the recovered water into the extraction liquid stream;

(v) passing the liquid stream containing matter extracted from the marc though a filter and then fractionating the filtered liquid stream by reverse osmosis to provide a permeate stream and a residue stream;

(vi) splitting the permeate stream by using a continuous feed still to provide an ethanol stream and a remainder stream;

(vii) feeding the remainder stream into the extraction liquid stream;

(viii) separating tartrates from the residue stream and combining the remaining residue stream with the ethanol stream to provide the recovered wine.

14. An apparatus for implementing the method according to one of claims 1 to 13 comprising diffusion extractor for diffusion extracting marc with an extraction liquid to provide a liquid portion containing matter extracted from the marc and reverse osmosis device for fractionating the liquid portion by reverse osmosis to provide a permeate and a residue.

15. An apparatus according to claim 14, further comprising a press for recovering water from the marc after extraction with an extraction liquid.

16. An apparatus according to claim 14, further comprising an evaporator for recovering water from the marc after extraction with an extraction liquid.

17. An apparatus according to claim 14, further comprising a cross-flow filter for filtering the liquid portion provided by the extractor before fractionation by reverse osmosis.

18. An apparatus according to claim 14, further comprising a still for separating ethanol from the residue.

19. An apparatus substantially as hereinbefore described with reference to figures 3A, 3B, 4A and 4B.

20. A method for recovering juice or wine from marc substantially as hereinbefore described with reference to figures 3A, 3B, 4A and 4B.

21. Wine or juice recovered by using the method of claim 1 or process of claim 13.

22. A method of increasing wine production by respectively combining wine or juice recovered by the method of claim 1 or process of claim 13 with free-run and / or press obtained wine or juice.